

COMMENTS AND COUNTER PROPOSAL ON THE TYPE-SPECIES OF  
*AMMODISCUS* REUSS, 1862 (FORAMINIFERA). Z.N.(S.) 1087

(see volume 19, pages 27-34, pl. 1-2)

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The proposal by Macfadyen, 1962 (*Bull. zool. Nomencl.* 19(1) : 27-34, pls. 1, 2) was stated to have as its purpose the stabilization of interpretation of the nominal genus *Ammodiscus* Reuss, 1862, and to that effect the species *Spirillina arenacea* Williamson, 1858, was recommended to be designated as type-species, prior designations being set aside for this purpose. Unfortunately, this proposal ignores the earlier definite type citation which does stabilize the generic interpretation, in accordance with the International Rules of Nomenclature and thus not requiring petition to the commission (Loeblich and Tappan, 1954, *Washington Acad. Sci., Jour.* 44(11) : 306 ; Gerke, 1960, *Sbornik Statei po Paleontol. i Biostratig.*, Nauchno-Issledov. Inst. Geol. Arkiki, Minist. Geol. i Okhrany Nedr SSSR, Vyp. 19, p. 7 ; Loeblich and Tappan 1961, *Micropaleontology* 7(2) : 189). The proposal to set aside earlier type designations in order to substitute as type-species one which is not available under application of the rules is therefore unnecessary.

2. In view of the redefinition of the species *Spirillina arenacea* included in the above-mentioned proposal, this species does not even agree with the generic diagnosis, but seems closer to the genus *Glomospirella* Plummer, 1945. Hence, its designation as type-species would not stabilize the interpretation of *Ammodiscus*, but would require its redefinition, suppression of the later genus *Glomospirella*, and probably require proposal of another taxon for species currently referred to *Ammodiscus*.

3. The proposed designation of a new type-species under the plenary powers is therefore here opposed, as follows : (a) The original definition of *Ammodiscus* included no citation of species, hence (Art. 69a (ii)) any subsequent author may select the type and such designation is not subject to change. The type selected must also be among those first to be included in the genus (Art. 69a). The first mention of any species in connection with the foraminifer genus *Ammodiscus* was by Bornemann, 1874 (*Deutsche Geol. Gesell., Zeitschr.* 26 : 702-749). The above-mentioned articles (Loeblich and Tappan, 1954, 1961 ; Gerke, 1960) regard *Ammodiscus infimus* Bornemann, 1874 (non *Orbis infimus* Strickland, 1846) = *Involutina silicea* Terquem, 1862 as type-species of *Ammodiscus*. This species was among those included in the first publication to cite species. *Spirillina arenacea* Williamson (proposed by Macfadyen, 1962, as type-species) was not therein included. (b) Macfadyen regarded *S. arenacea* as available for type designation because of the citation of generic synonymy (*Cornuspira* Will. z. Thl., *Trochammina* Park. et Jon. z. Thl.) by Reuss, although according to the revised International Code of Zoological Nomenclature, 1961, Art. 69a (ii) (1), " Mere reference to a publication containing the names of species does not by itself constitute the inclusion of species in a nominal genus ", and as no species were actually mentioned in the original publication, the type must be selected from " one of those first subsequently referred to the genus ". Art. 69a. The first subsequent publication to cite included species was that of Bornemann, 1874, and *Spirillina arenacea* Williamson was not included in this publication, as mentioned above. (c) As redefined by Barnard in the above petition by Macfadyen, 1962, *Spirillina arenacea* does not have the generic characters originally described and commonly stated for *Ammodiscus* (i.e., planispiral development). Each of the ten specimens of Williamson's material was stated to have the early coiling abruptly reversed in direction, and the development is thus streptospiral or glomospiral in nature. Such early glomospirine coiling followed by planispiral coiling is characteristic of the genus *Glomospirella* Plummer, 1945. Recognition of *S. arenacea* as type of

*Ammodiscus*, would make the latter a senior synonym of *Glomospirella*, and leave planispiral forms previously and correctly referred to *Ammodiscus* for almost a century without an applicable generic taxon. (d) Independent and almost simultaneous studies by Gerke, 1960, and Loeblich and Tappan, 1961 (*op. cit.*) reached identical conclusions as to the valid type-species of *Ammodiscus*, designated in agreement with the International Rules, and in accord with the regulations as to subsequent designation of type-species and differing from that suggested by Macfadyen. The latter article of Loeblich and Tappan was mentioned only in a footnote to the presently discussed petition, but the discussion was ignored and the conclusions as to type-species disregarded. The article by Gerke on the systematics and nomenclature of *Ammodiscus* and *Involutina* was apparently completely overlooked by Macfadyen. Gerke, 1960 (p. 7) recognized *Ammodiscus* Reuss, 1862 as emended by Bornemann, 1874, with type-species cited as follows, "Tipichnyi Vid : *Involutina silicea* Terquem, 1862, Mém. Acad. Imp. Metz., T. 42 (ser. 2, T. 9), str. 450, tabl. 6, fig. IIa, b = *Ammodiscus infimus* Bornemann, 1874 (non *Orbis infimus* Strickland, 1846). Zeitsch. deutsch. geol. Gesellsch., t. 26, str. 725, tabl. 18, fig. 4-7; tabl. 19, fig. 8 = *Involutina silicea* Loeblich and Tappan, 1954, Journ. Wash. Acad. Sci., t. 44, no. 10, str. 310, fig. 2a, 2b". Gerke's fully documented discussion of this type designation occupied five pages. He also (Gerke, 1960, p. 12) recognized *Involutina* Terquem, 1862, emend. Bornemann, 1874, with type-species cited as follows: "Tipichnyi Vid : *Nummulites liassicus* Jones, 1853 in Brodie. Ann. and Magaz. of Nat. Hist., ser. 2, t. 12, str. 272 = *Involutina jonesi* Terquem et Piette, 1862 in Terquem. Mém. Acad. Imp. Metz. t. 42 (ser. 2, t. 9), str. 461, tabl. 6, fig. 2a-d = *Involuntina liassica* Brady, 1864. Geol. Magaz., t. 1, no. 5, str. 193, riz. 1, 2, tabl. 9, fig. 1-6." Documented discussion of this citation by Gerke occupied five pages. The article by Loeblich and Tappan, 1961 (*Micro-paleontology* 7(2) : 189-192) fully discussed the historical and legal aspects of the generic status and type-species of both *Involutina* and *Ammodiscus*, hence these are not here reviewed in detail. The following quoted paragraph (pp. 191-192) summarizes the conclusions of this publication. "In view of the above discussion and Rules, the type-species of *Ammodiscus* is *Ammodiscus infimus* Bornemann, 1874 (not *Orbis infimus* Strickland, 1846) = *Involutina silicea* Terquem, 1862; fixed by subsequent designation by Loeblich and Tappan, 1954, p. 306, emended herein, 1961. This designation is substantiated as follows: (1) Bornemann (1874, p. 711) stated that the group of *Involuntina silicea* was to be referred to *Ammodiscus* and definitely mentioned the removal of this species to *Ammodiscus* (page preference). (2) Bornemann's description of the genus *Ammodiscus* was based on original material of Terquem's *Involutina silicea*, and not on material of any other previously described species. (3) The only other species placed by Bornemann in *Ammodiscus* is *Involutina aspera* Terquem, 1863. The description of this species was quoted from Terquem, and Bornemann only provisionally recognized it, stating (as was noted by Wicher, 1944, pp. 349-350) that possibly it might also be a synonym of *A. infimus* (as was understood by Bornemann, not that of Strickland). Wicher also regarded *I. aspera* as synonymous with *Ammodiscus infimus*. Thus according to Bornemann only one species regarded as completely valid was referred to *Ammodiscus* (=virtual monotypy). (4) The citation of *Orbis infimus* Strickland as type-species, by Loeblich and Tappan (1954) was based on the placement of *O. infimus* in *Ammodiscus* by Bornemann and the erroneous assumption that Bornemann had fixed the type by subsequent monotypy. Nevertheless, although not intended as a type fixation itself, but merely as a citation of an earlier type designation, the acceptance of this species as type by Loeblich and Tappan fixed it without possibility of change. (5) The citation of Bornemann's article as fixing the type, although erroneous, thus hinges the type validity upon that publication. Bornemann had erroneously assumed *Orbis infimus* to be a prior synonym of *Involutina silicea* and his description of *Ammodiscus infimus* (Strickland) leaves no doubt that it was based on material erroneously identified with that species, but correctly belonging to *Involutina silicea* Terquem (misidentification of species

selected as type). (6) The specific designation of the type species, according to paragraph 212 (cited above) [now Art. 70(b)], should therefore be *Ammodiscus infimus* Bornemann, 1874. As this is a junior synonym of *Involutina silicea* Terquem, 1862, the species may be referred to as *Ammodiscus siliceus* (Terquem)".

4. Inasmuch as the type-species of *Ammodiscus* had been legally designated in the only way possible under adherence to the Rules of Nomenclature, and the status of *Ammodiscus* fixed thereby, it is so indicated by the writers in the section on Foraminiferida in the *Treatise on Invertebrate Paleontology*, Part C. Protista 2 (1962, in press), as follows "*Ammodiscus* Reuss, 1862 (p. 365) [*\* Ammodiscus infimus* Bornemann, 1874 (p. 725) (*non Orbis infimus* Strickland, 1846) = *Involutina silicea* Terquem, 1862 (p. 450); SD Loeblich & Tappan, 1954 (p. 306); Gerke, 1960 (p. 7); Loeblich & Tappan, 1961 (p. 191)] [= *Arammodiscum* Rhumbler, 1913 (p. 387) (*nom. van.*) (*obj.*); = *Bifurcammina* Ireland, 1939 (p. 201), type: *B. bifurca*]" The asterisk in the above bracket designates the type-species of the genus in this as in previously published volumes of the *Treatise*.

5. In order to promote stability in nomenclature, in agreement with the published Rules of Nomenclature, the International Commission is therefore requested to deny the portion of Z.N.(S.) 1087 regarding type citation for *Ammodiscus*, but instead

(1) to use its plenary powers:

(a) to recognize the type designation as cited by Gerke, 1960, and by Loeblich and Tappan, 1961, for the nominal genus *Ammodiscus* Reuss, 1862, as *Ammodiscus infimus* Bornemann, 1874 (*non Orbis infimus* Strickland, 1846) = *Involutina silicea* Terquem, 1862; fixed by subsequent designation by Loeblich and Tappan, 1954, p. 306, emended Gerke, 1960, p. 7; Loeblich and Tappan, 1961, p. 191.

(2) to place the following generic names on the Official List of Generic Names in Zoology:

(a) *Ammodiscus* Reuss, 1862 (gender: masculine), type-species, by subsequent designation, Loeblich and Tappan, 1954, 1961: *Ammodiscus infimus* Bornemann, 1874.

(b) *Involutina* Terquem, 1862 (gender: feminine), type-species, by subsequent designation of Bornemann, 1874, p. 711: *Involutina jonesi* Terquem and Piette in Terquem, 1862, p. 461 = *Nummulites ? liassicus* Jones in Brodie, 1853, p. 275.

(3) to place the following specific names on the Official List of Specific Names in Zoology:

(a) *silicea* Terquem, 1862, as published in the binomen *Involutina silicea* [senior synonym of *Ammodiscus infimus*, type-species of *Ammodiscus*];

(b) *arenacea* Williamson, 1858, as published in the binomen *Spirillina arenacea*, subsequently referred to *Ammodiscus* by Macfadyen, 1962, herein referred to *Glomospirella* Plummer, 1945;

(c) *liassicus* Jones, 1853, as published in the binomen *Nummulites ? liassicus* [senior synonym of *Involutina jonesi*, the type-species of *Involutina*];

(d) *infimus* Strickland, 1846, as published in the binomen *Orbis infimus*, and as defined by the lectotype selected for the species by Barnard, 1954, subsequently referred to the genus *Spirillina* Ehrenberg, 1843.

(4) to place the following family-group names on the Official List of Family-Group Names in Zoology:

(a) AMMODISCIDAE Reuss, 1862 (*nom. correct.* Rhumbler, 1895, p. 83, *pro* family AMMODISCINEA Reuss, 1862, p. 365).

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I should like to express my opposition to the petition of Mr. W. A. Macfadyen for the designation of a type-species of *Ammodiscus* Reuss, 1862, utilising the plenary powers of the Commission.